

## WEST Search History





DATE: Thursday, December 08, 2005

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L39	L38 and ground\$4	9
<input type="checkbox"/>	L38	5837064	19
	<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L37	('4132567' '4535576' '4974375' '5190064' '5364472' '5409418' '5421766' '5480563' '5601478' '5605484' '5628463' '5651834')![pn]	12
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L36	5364472	20
	<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L35	('3778935' '4535576' '4617064' '4974375')![pn]	4
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L34	ground\$4 and L33	5
<input type="checkbox"/>	L33	l32 and (static or electrostatic)	10
	<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L32	('4132567' '4569695' '4974375' '5354384' '5364472' '5405283' '5409418' '5421766' '5447577' '5514024' '5545073' '5616067' '5651834' '5679062')![pn]	14
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L31	5928434	12
<input type="checkbox"/>	L30	circuit same L28	70
<input type="checkbox"/>	L29	clean\$4 same L28	24
<input type="checkbox"/>	L28	mitigat\$4 with (electrostatic or static)	450
	<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L27	('4535576' '5081068' '5147466' '5288332' '5354384' '5409418')![pn]	6
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<input type="checkbox"/>	L26	6103016	2
<input type="checkbox"/>	L25	electrostatic same clean\$4 same (circuit board)	45
<input type="checkbox"/>	L24	L23 and ground\$4	57
<input type="checkbox"/>	L23	('co.sub.2' or (dry ice)) same (circuit board)	213
<input type="checkbox"/>	L22	L21 and (pin\$2 with ground\$4)	51
<input type="checkbox"/>	L21	L19 and pin\$2	391
<input type="checkbox"/>	L20	L19 and pinns	0
<input type="checkbox"/>	L19	L18 not l17	922

<input type="checkbox"/>	L18	L16 and ground\$4	1000
<input type="checkbox"/>	L17	L16 and grounding	78
<input type="checkbox"/>	L16	('co.sub.2' or (dry ice)) and (circuit board)	2944
<input type="checkbox"/>	L15	L4 and (grounding same electrostatic)	34
<input type="checkbox"/>	L14	('co.sub.2' or (dry ice)) and l13	10
<input type="checkbox"/>	L13	grounding with (circuit board)	3654
<input type="checkbox"/>	L12	('co.sub.2' or (dry ice)) with grounding	12
<input type="checkbox"/>	L11	(spray or jet or 'co.sub.2' or (dry ice)) with grounding	379
<input type="checkbox"/>	L10	(l8 or l9) and grounding	4

*DB=USPT,PGPB; PLUR=YES; OP=ADJ*

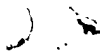
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*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

<input type="checkbox"/>	L7	l5 and grounding	5
<input type="checkbox"/>	L6	l5 and groundingL5	0
<input type="checkbox"/>	L5	134/7.ccls.	973
<input type="checkbox"/>	L4	134/\$.ccls. or 15/\$.ccls.	170914
<input type="checkbox"/>	L3	6524394.pn.	2
<input type="checkbox"/>	L2	grounding and L1	0
<input type="checkbox"/>	L1	dry ice and 15/\$.ccls.	13

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L25: Entry 38 of 45

File: DWPI

Oct 5, 1999

DERWENT-ACC-NO: 1999-614352

DERWENT-WEEK: 200004

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TITLE: Plate cleaning apparatus for shaping laminated sheet used for electronic machine, electric equipment, etc - has heater and grinding brush in specific zone for removing foreign particles adhered on circuit board

PATENT-ASSIGNEE:

ASSIGNEE

MATSUSHITA ELECTRIC WORKS LTD

CODE

MATW

PRIORITY-DATA: 1998JP-0079056 (March 26, 1998)

Search Selected

Search ALL

Clear

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<input type="checkbox"/> <a href="#">JP 11267597 A</a>	October 5, 1999		004	B08B001/02

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 11267597A	March 26, 1998	1998JP-0079056	

INT-CL (IPC): [B08 B 1/02](#); [B08 B 5/02](#); [B08 B 7/00](#)

ABSTRACTED-PUB-NO: JP 11267597A

BASIC-ABSTRACT:

NOVELTY - An electrostatic removal apparatus (3) attached with a nozzle (2) is provided in the two zones (A,D) to supply ionized high pressure air on circuit board (1). An ultraviolet ray supplying apparatus (6) is provided in zone (B) for removing deposits on the board. A heater (7) and a grinding brush (11) are provided in zone (C) for removing foreign particles adhered on the board.

USE - For shaping laminated sheet and printed circuit used for computer and other electronic machines, electric equipment, communication apparatus, etc.

ADVANTAGE - Enables removing foreign particles adhered on circuit board, easily and reliably without supplying water.

DESCRIPTION OF DRAWING - The figure shows the explanatory drawing of plate cleaning apparatus. (1) Circuit board; (2) Nozzle; (3) Electrostatic removal apparatus; (6) Ultraviolet ray supplying apparatus; (7) Heater; (11) Grinding brush; (A-D) Zones.

CHOSEN-DRAWING: Dwg.1/1

TITLE-TERMS: PLATE CLEAN APPARATUS SHAPE LAMINATE SHEET ELECTRONIC MACHINE ELECTRIC  
EQUIPMENT HEATER GRIND BRUSH SPECIFIC ZONE REMOVE FOREIGN PARTICLE ADHERE CIRCUIT  
BOARD

DERWENT-CLASS: A35 P43

CPI-CODES: A11-C; A12-E01;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; P0000 Polymer Index [1.2] 018 ; ND05 ; J9999 J2915\*R ;  
N9999 N6688 N6655 ; Q9999 Q7818\*R ; Q9999 Q7330\*R ; Q9999 Q7454 Q7330 ; K9869 K9847  
K9790 ; N9999 N6177\*R

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1999-179045

Non-CPI Secondary Accession Numbers: N1999-453020

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L15: Entry 26 of 34

File: USPT

Apr 5, 1983

DOCUMENT-IDENTIFIER: US 4378610 A

TITLE: Device for removing impurities from data carriers

Detailed Description Text (17):

The electrodes 22, 24 could be omitted. However, it has been found that, especially when the humidity is relatively low, the data carriers tend to become very strongly charged and that the brushes dissipate the charge too slowly, because the transitional resistance between the shafts of the brushes and their journals is too high. The problem, especially of grounding, becomes particularly severe if the journals are made of synthetic plastic material, as is becoming widely customary. The electrodes afford the desired speed-up in the dissipation of electrostatic charges since they ensure an almost complete discharge so that the individual bristles, fibers or the like reach the data carrier fully discharged during each revolution.

Current US Original Classification (1):

15/1.51

Current US Cross Reference Classification (1):

15/100

## CLAIMS:

1. A device for cleaning data carriers, particularly photographic films, records, magnetic tapes and the like, comprising:

(a) a brush for cleaning a data carrier, said brush including separate first and second cleaning elements, and said first elements being electrically conductive to thereby permit electrostatic charge on the data carrier to be neutralized while the data carrier is cleaned by said first elements, said second elements having a cleaning action superior to that of said first elements so as to enhance the cleaning effect obtained with the latter; and

(b) grounding means connecting said elements to ground to thereby enable electrostatic charge on the data carrier to be dissipated.

15. A device for cleaning data carriers, particularly photographic films, records, magnetic tapes and the like, comprising:

(a) an electrically conductive brush for cleaning a data carrier; and

(b) grounding means connecting said brush to ground so as to enable electrostatic charge on the data carrier to be dissipated, said grounding means including a collector electrode having a surface portion which contacts a peripheral portion of said brush, and said surface portion substantially conforming to the shape of said peripheral portion to enhance the contact between said surface portion and said peripheral portion and thereby improve the dissipation of electrostatic charge generated on the data carrier.

21. A device for cleaning data carriers such as photographic films, records,

magnetic tapes and the like which tend to undergo frictional electrostatic charging comprising at least one elongated brush having a surface section adapted to engage and clean a data carrier in response to relative movement between said brush and the data carrier, said surface section including at least some portions which consist of electrically conductive material; means for grounding said portions so as to dissipate electrostatic charge on the data carrier via said portions, said grounding means including a collector electrode which has a length substantially equaling the length of said brush and is in surface-to-surface contact with said surface section thereof; and an electrically conductive housing for said electrode and said brush connected with said electrode in electrically conductive relationship, at least the major portion of said brush being disposed in said housing.

22. A device for cleaning data carriers such as photographic films, records, magnetic tapes and the like which tend to undergo frictional electrostatic charging comprising at least one elongated brush of cylindrical outline having a surface section adapted to engage and clean a data carrier in response to relative movement between said brush and the data carrier, said surface section including at least some portions which consist of electrically conductive material; and means for grounding said portions so as to dissipate electrostatic charge on the data carrier via said portions, said grounding means including a collector electrode which has a length substantially equaling the length of said brush and is in surface-to-surface contact with said surface section thereof, and said electrode being arcuate transversely of its elongation and having a radius which at least substantially equals the radius of the periphery of said brush.

23. A device for cleaning data carriers such as photographic films, records, magnetic tapes and the like which tend to undergo frictional electrostatic charging comprising at least one elongated brush of cylindrical outline having a surface section adapted to engage and clean a data carrier in response to relative movement between said brush and the data carrier, said surface section including at least some portions which consist of electrically conductive material; and means for grounding said portions so as to dissipate electrostatic charge on the data carrier via said portions, said grounding means including a collector electrode which has a length substantially equaling the length of said brush and is in surface-to-surface contact with said surface section thereof, and said electrode being arcuate and surrounding said brush along an arc of 60.degree. to 180.degree..

25. A device for cleaning data carriers such as photographic films, records, magnetic tapes and the like which tend to undergo frictional electrostatic charging comprising at least one elongated brush having a surface section adapted to engage and clean a data carrier in response to relative movement between said brush and the data carrier, said surface section including at least some portions which consist of electrically conductive material; means for grounding said portions so as to dissipate electrostatic charge on the data carrier via said portions, said grounding means including a collector electrode which has a length substantially equaling the length of said brush and is in surface-to-surface contact with said surface section thereof; and an additional brush similar to and located opposite said one brush and defining therewith a nip through which the data carrier is compelled to pass.

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L7: Entry 4 of 5

File: USPT

Jul 29, 1997

DOCUMENT-IDENTIFIER: US 5651834 A

TITLE: Method and apparatus for CO.sub.2 cleaning with mitigated ESD

Brief Summary Text (7):

There are two possible approaches to reducing the ESD associated with CO.sub.2 cleaning. One possible approach is to reduce or eliminate tribocharging of the board. In practice, reducing tribocharging has not proved feasible. The other approach is to mitigate ESD during CO.sub.2 cleaning. One conventional method of mitigating ESD is to dissipate the charge generated during tribocharging by grounding the conductive areas on the circuit board. Unfortunately, charge may also build up on the non-conductive surfaces of the circuit board during CO.sub.2 cleaning. Such surfaces, by their very nature, cannot be grounded. Thus, grounding, by itself, will not reduce ESD below a level at which a circuit board containing ESD-sensitive components can be safely cleaned. Additionally, grounding the conductive areas on each circuit board is not practical for most in-line cleaning processes.

Current US Cross Reference Classification (3):

134/7

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L7: Entry 3 of 5

File: USPT

Jul 27, 1999

DOCUMENT-IDENTIFIER: US 5928434 A

TITLE: Method of mitigating electrostatic charge during cleaning of electronic circuit boards

Brief Summary Text (7):

There are two possible approaches to reducing the ESD associated with CO.sub.2 cleaning. One possible approach is to reduce or eliminate tribocharging of the board. In practice, reducing tribocharging has not proved feasible. The other approach is to mitigate ESD during CO.sub.2 cleaning. One conventional method of mitigating ESD is to dissipate the charge generated during tribocharging by grounding the conductive areas on the circuit board. Unfortunately, charge may also build up on the non-conductive surfaces of the circuit board during CO.sub.2 cleaning. Such surfaces, by their very nature, cannot be grounded. Thus, grounding, by itself, will not reduce ESD below a level at which a circuit board containing ESD-sensitive components can be safely cleaned. Additionally, grounding the conductive areas on each circuit board is not practical for most in-line cleaning processes.

Current US Cross Reference Classification (9):134/7

## CLAIMS:

5. The method of claim 1, further comprising grounding and shunting the electronic circuit board.

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